REMARKS/ARGUMENTS

Applicants have amended their claims to more particularly point out their claimed subject matter, and request the Examiner to reconsider this application in view of the amendments and the following remarks.

The Examiner has rejected the claims 20, 27, and 40 based on Jain USP 6,797,412. The disagreement seemed to originate from the definition of "modulation". The Examiner equates "modulation" to "absorption". However, an optical modulator changes its absorption as a result of external stimuli, such as an applied electrical voltage. The confusion about the definition of "modulate" is due to the fact that applicants original claims did not clearly convey this intention. Applicants therefore have made modifications to Claims 20, 27, and 40 to more clearly convey a distinction between "modulate" and "absorb".

Applicants' illustrative non-limiting exemplary disclosed modulator switches from being opaque to being transparent to a certain wavelength, or vice versa, as a result of the applied voltage. An example can be found in the present specification:

> "... A voltage is applied between the two electrodes to switch the modulator between on and off states. For light at the working wavelength, at on state the device is highly transparent while at off state the device is almost opaque. (Note that voltage on can correspond to either modulator on or off. For example, 0 Volts could be transparent (on), while non-zero voltage could be opaque (off).)" ([0059]).

The language "operable" at wavelengths such as 248 nm, 193 nm, or 157 nm, therefore, does not mean "absorb" at these wavelengths. Instead, it means the ability to switch between opaque and transparent states at these wavelengths by applying a

voltage. This ability, as described in applicants' specification, is a result of the unique optical properties near the bandgap of the semiconductor nano-particles. In order to "modulate" at these wavelengths, it is necessary for the nano-particles to have bandgap energy close to these wavelengths. Jain's device may absorb at all these wavelengths, but the claim that its absorption at these wavelengths can be modulated by applying a voltage is un-supported. In fact, the bandgap of Jain's nanodots is far from these wavelengths.

The Examiner has also rejected claims 20, 27, and 40 based on Cooper in view of Berggren '707, Murray et al, and Wang at al. In light of the amendments to the claims and the arguments made in the preceding paragraphs, applicants believe they have addressed this rejection. The nanodots from Berggren, Murray, and Wang all absorb at 248 nm, 193 nm, and 157 nm, but because their bandgap energy is far away from these wavelengths they do not appear to modulate at these wavelengths. For example, the bandgap of Berggren's nanodots is ~ 600 nm. Therefore, to a person with ordinary skill in the art, simply combining the four references does not lead to a nanodots-based programmable mask as claimed.

All outstanding issues have been addressed and this application is in condition for allowance. Should any minor issues remain outstanding, the Examiner should contact the undersigned at the telephone number listed below so they can be resolved expeditiously without need of a further written action.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed

herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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